

MISCELLANEOUS NOTES ON NEOTROPICAL FLORA XVIII. NEW SPECIES IN THE HUMIRIACEAE

Jose Cuatrecasas

Department of Botany, Smithsonian Institution, Washington, D.C.

ABSTRACT

Four new species of Humiriaceae are described: *Schistostemon fernandezii* J. Cuatrec. and *Humiriastrum ottohuberi* J. Cuatrec. from the Venezuelan Guayana and *Vantanea morii* J. Cuatrec. and *Vantanea bahiaensis* J. Cuatrec. from Brazil.

KEY WORDS: Humiriaceae, *Humiriastrum*, *Schistostemon*, *Vantanea*, Brazil, Venezuela.

In the process of working on the Humiriaceae for the Flora of the Venezuelan Guayana, in preparation by the Missouri Botanical Garden, and through the study of a great number of Brazilian specimens recently received at US for identification, four new species were detected. Their descriptions are here provided.

***Humiriastrum ottohuberi* J. Cuatrec., sp. nov.** TYPUS: VENEZUELA.

Amazonas: Río Casiquiare, arriba de Solano, 100 m alt, tree 8 m tall, trunk about 50 cm diam., flowers green, leaves coriaceous dark green above, 8 Apr 1970, Julian A. Steyermark & George Bunting 102442 (HOLOTYPE: US; Isotype: US).

Arbor mediocris. Rami juveniles resinosi et dense minuteque hirsutuli. Folia alterna breviter pseudopetiolata. Lamina adaxialiter atroviridis, tenuiter coriacea sed rigida, late elliptica vel obovato-elliptica, utrinque obtusa, apice vulgo subite obtuse apiculato, basi subite cuneata pseudo-petiolata, 4-7 x 2.5-4.8 cm, apiculo (3-5 mm) excluso, margine integra vel obsolete subcrenata, costa adaxialiter sicut petiolo minute hirtula, in vetusta glabrata, superficie occulo nudo utrinque laevis enerviaque, sed nervis secundariis patulis 1 mm inter se distantibus sub lente saepe subtilissime notatis, et abaxialiter epidermo minutissime papillato glanduloso signato. Pseudo-petiolum 1-3 mm longus.

Inflorescentiae cymoso-paniculatae, dichasialiter et monochasia-liter ramificatae, 3-6 cm longae, axillares quam folia breviores; pedunculi 1-2 cm longi; rami articulati saepe ancipitati sicut pendunculi minutissime denseque erecto-pilosii subvelutini; ramusculi ultimi cimas breves subglomeratas floribus sessilibus vel subsessilibus ferentes. Bracteae persistentes, ovatae obtusiusculae vel proximales triangulares, 0.5-1 mm longae, sparse minuteque pilosae, margo ciliatae, base ramos ramulosque amplectentes.

Alabastra sessilia vel subsessilia 2 mm longa ovata obtusa, sparse minuteque hirtula. Calyx quincuncialis circa 1.3 mm longis sepaliis 5, basi coalitis, parte libera orbiculari crassiuscula extus glabra resinoso-punctata, margine minute ciliata 0.8 mm longa lataque. Petala 5, oblonga 3-3.2 x 1.4 mm crassiuscula margine anguste membranacea, distaliter paulo attenuata apice obtuso, vel subacuto, basi subite contracta 0.6-0.7 mm lata, adaxialiter glabra laevia, abaxialiter epidermide glandulata, sursum hirtula pilis minutis semipatulis acutis albis antrorsis. Stamina 20: decem longiora circa 2 mm longa, cum decem 0.5 mm breviora alternantia, filamentis glabris complanatis distaliter acutis, base in tubo coalitis. Antherae 0.8 mm longae, connectivo crasso acuminato, thecis albis ellipticis basale affixis 0.2 mm. Discus crasse membranaceus cylindraceo-cupularis argute dentatus, 0.7 mm altus ovarium cingens. Ovarium depresso-globosum, laeve glabrum, 5-tabicatum, 5 cavitatis uniovulatis, tantum 3-2 ovulis oblongo-ellipticis 0.5-0.6 mm longis evolutis. Stylus crassiusculus brevis 0.6 mm. Stigma capitato-stellata radiis albis glutinosis.

Fructus drupaceus ellipsoideus vel subrotundatus 3 x 2.5 cm, exocarpio crasso, endocarpio lignoso anfractuoso cavernoso, cavitatis resiniferis, in specimine forsans inmaturus.

Another collection: VENEZUELA. Amazonas: Depto. Río Negro, selvas pluviales de rebalse del Bajo Pasimoni entre la boca y Laguna Buridajao, 19 Apr 1985, Stergios, Aymard & Nico 8327 (US).

This new species differs from *Humiriastrum colombianum*, *H. excelsum* and *H. glaziovii*, mainly by the shape of the thinly leathery leaves which are abruptly obtuse-apiculate, as well as by the very minute hirtellous indument of the branchlets and by the persistence of the bracts. The name is dedicated to Dr. Otto Huber, who recently has contributed considerably to the knowledge of the distribution and ecology of the Humiriaceae in the Venezuelan Guayana with rich collections and sound annotations.

Schistostemon fernandezii J. Cuatrec., sp. nov. TYPUS: VENEZUELA. Bolívar: Gran Sabana, South of Urimán (4-9 km), margin of Laguna Ca-

paura, 440 m. alt., Arbol 4.5 m, estambres ocres, Mar 86, Angel Fernández 2276 (HOLOTYPE: US; Isotypes: VEN, MY).

Arbor ad 4 m alta. Rami foliati terminales teretes nitidi, hirtuli pilis minutissimis unicellularibus acutis patulis. Folia alterna petiolata. Petiolus 3-6 mm longus crassiusculus glaber adaxialiter planus, abaxialiter rotundus, basi breviter incrassati-pulvinatus. Lamina rigide coriacea, ovato-elliptica vel elliptica apice attenuata vulgo 0.5-1 mm cuspidata acutaque, basi rotundata vel breviter obtuseque angustata, 5-10 x 3-5.8 cm plus apiculo 0.5-1 cm longo, margine integerrima; superficie glabra, adaxialiter nitida laevis brunnescenti-viridis, costa ampla plana vel paulo elevata nervis secundariis 7-8 utroque latere parce prominulis cum venuis discoloribus (luteolis) laxi-reticulatis, abaxialiter costa prominenti reliquis nervis venulisque leniter notatis vel obsoletis.

Inflorescentiae axillares 1.5-3 cm longae, conferte cymosae paniculatæ, pedunculo (axis) robusto ancipitato ad 6 mm longo vel brevissimo, ramis monochasialiter raro dichasialiter ramificatis robustis brevibus intricatis, omnibus sicut axe dense hirtulis pilis minutis rigidis acutis patentibus. Bracteae persistentes, deltoides semiamplectentes acutae vel subacutae 1-0.5 mm longae.

Alabastra maturitate viridula late-oblonga obtusiuscula vel apice subacuto, 3 x 1.5 mm, minutissime hirtula. Flores per anthesin 7-8 mm diam. Calyx quincuncialis sepalis orbicularibus 1-1.2 mm longis 1.3-1.5 mm latis, basi breviter in annulum coalitis, praeter marginem minute ciliolatum glaberrimus, sed epidermo resinoso. Petala 5, rigide carnosula oblonga acutiuscula, 3-3.3 x 1.2 mm, abaxialiter hirtula pilis minutis unicellularibus antrorsis vel patulis albis. Stamina 20, filamentis complanatis basi in tubo circa 1 mm longo coalitis; 5 filaments oppositipetala longiora, 3 mm longa, apice breviter trifurcata et triantherifera, unumquidque cum anthera centrali 0.8 mm longa connectivo crasso obtusissimo castaneo thecis duobus ellipticis luteis lateraliter ad basem affixis, et 2 antheris lateralibus brevibus, 0.3 mm, fortasse sterilibus; 5 filaments oppositipetala paulo breviora, 2.5 mm longa monantherifera antheris latis quam praecedentibus fertilibus similiter; 10 filaments minora interposita, 2 mm longa, cum antheris singulis 0.5-0.6 mm longis perfecte fertilibus. Grana pollinica glutinose glomerata alba. Discus cylindricus, 0.8 mm altus, 20-acuti-dentatus, ovarium cingente, in 5 squamas faciliter fragmentabilis. Ovarium globosum 1.5 m altum glabrum saepe 3 ovulis oblongis 0.6 mm longis inter fibias et cavas resinosas. Stylus brevis robustus glaber 0.3 mm longus. Stigma plano-capitata et 5-stellata radiis valde glutinosis.

Fructus drupaceus 2.4-2.8 x 1.9-2 cm, ellipsoideus, oliviformis superficie laevissima nitida viridi-olivacea; exocarpium 1 mm crassum; endocarpium lignosum ellipsoideum 2.6 x 2.1 cm fere laeve moderatissime sinuatum, extus 5-sulcatum sulcis angustissimis ad apicem latioribus parce foveolatis, interiore saepe semina unica oblonga in cavitate 10 x 4.5 mm, reliqua parte ubique cavitatis rotundatis inaequalibus resiniferis vel vacuis instructa.

Other collection: VENEZUELA. Bolívar: Expedition to Auyan-tepui, near Guayaraca above Valle de Camarata, 1000 m, Rocky edge of escarpment, Shrub 1-2 m, sprawling, leaves deep green above, yellow green below, fruit not edible, broadly oblong, 3 x 2.5 cm (probably immature), 8 May 1964, J. Steyermark 94197 (US, NY).

This species is closely related to *Schistostemon auyantepuiense* from which it differs by the brownish-green, rigid leaves with nerves loosely reticulate above and almost smooth abaxially, and by the smaller flowers, their petals being 3-3.3 mm long. The young branchlets are hirtellous. *Schistostemon auyantepuiense* has leaves dark green, prominently minute reticulate on both sides, the petals are 4-4.5 mm long and the young branchlets glabrous (not pilose as written in the original description).

Vantanea bahiaensis J. Cuatrec., sp. nov. TYPUS: BRAZIL. Bahía: Município Belmonte, Itapebí, beira da estrada, Árvore com 8 m de altura, folha discolor, flores com calice amarelo-esverdeado, petas amarelo-esverdeado, frutos imaturos verdes, 1 Ago 1981, A.M. de Carvalho & José Gatti 484 (HOLOTYPE: NY; Isotype: US). PARATYPES: BRAZIL. Bahía: Belmonte km 1, a 10 do ramal (de cima) p/Mogiquiçaba, mata litoranea, arvor de 8 m alt, flores esverdeadas, anteras amarelas, 17 Abr 1975, T.S. Santos 2983 (US); Prado, árvore 6 m alt, flor crema, anteras amarelas, 21 Jan 1974, T.S. Santos 2737 (US).

Arbor parva ad 10 m alta. Rami ramuscule glabri. Folia alterna coriacea firma petiolata glabra. Lamina obovata apice late-rotundata, vel obtusa, basim angustato-cuneata, (4.5-)6-9 x (3.4-)4-6.4 mm, margine integra, adaxialiter nervis parum visibilis, abaxialiter costa prominenti, nervis secundariis parallelis prominulis 10-12 utroque latere prope marginem arcuatis anastomosatisque, saepe nervis brevioribus minus signatus parallelis cum praecedentibus alternatis, venis minoribus prominulis laxe reticulatis plus minusve notatis. Petiolus gracilis basi parce incrassatus 10-16 mm longus.

Inflorescentiae terminales vel subterminales saepe floribundae cymoso-paniculatae corymbiformes, 6-10 cm longae, 6-10 cm expansae, interdum 2-3 subterminales synflorescentia valde floribunda

ad 20 cm lata instructae. Ramificatio monochasialis interdum dichasialis in angulo acuto, ad modum articulata. Rami ramusculi pedicellique dense minuteque hirtuli, minute tomentoso-velutini. Ramuli distales saepe breves glomerulos paucifloros formantes. Pedicelli crassi 0.5-1.5 mm cum floribus adnati. Bractae oblongae ca 0.6 mm longae parce attenuatae obtusae jam deciduae.

Alabastra 4-5 mm longa pyramidata subacuta glabra vel subglabra. Pedicelli brevi crassi ca 1 mm, ad florem adnati. Flores per anthesin ca 10-12 mm diam albi. Calyx quincuncialis; sepala 1-1.2 mm alta, 1.5-2 mm lata basi coalita, apice late rotundata, dorso inocrassata saepe 1(-3) glandulis munita, glabra vel subglabra margine minutissime ciliata. Petala 4-5.8 x 2.1-2.3 mm, crassiuscula oblonga sursum gradatim attenuata apice subacuto margine uno latere membranacea, basi ungui ovato vel quadrato 0.7-1 mm longo lattoque, aestivatione contorta, abaxialiter dorso sparsis minutis pilis adpressis vel pilis minutis crassiusculis resiniferis patulis. Stamina saepe 30-40, interdum 26; filamenta 3.5-3.8 mm longa cum altera breviora 2.5-3.2 mm alta alternantia, complanata distaliter filiformia basi in annulum 0.7-1 mm altum crassiusculum coalita glabra. Antherae 0.8 mm longae dorsaliter circa basim affixae, connectivo ovato-acuminato acuto, thecis duobus ellipticis bilocularibus 0.5-0.6 mm longis laterale affixis, longitudinalibus dehiscentibus. Discus intrastaminalis crassus crenato-acutidentatus glaber cupulariformis basim ovarium cingens, 1 mm altum. Ovarium rotundatum 1.8-2 mm diam argute striatum supra depresso sed ad centrum conicum, dense minuteque tomentoso-velutinum, 5-septatum, loculis biovulatis, ovlis superpositis oblongis, 0.6-0.7 mm longis. Stylus brevis, 1-1.5 mm longus, crassiusculus inferne hirtellus, distale glaber. Stigma capitatum breviter lobatum lobis planis obtusis erectis glutinosum.

Fructus drupaceus ellipsoideus utrinque obtusus, 22 x 18-19 mm, exocarpio brunnescens minute velutino coriaceo ruguloso resinoso ca 1 mm crasso. Endocarpium ellipticum obtusum 20-21 x 16-17 mm, brunnescens-luteolum sinuato-rugulosum compactissime lignosum, 1-3 cellis monospermis seminibus oblongis, 5 valvis oblongis longitudinale bene signatis ca 17-18 mm longis, 4-5 mm latis.

Additional collections: BRAZIL. Bahia: Itabuna, km 80 between Betanha and Canavieiros, tree 4 m, fruits, 13 Jul 1964, N.T. Silva 58410 (US); Ilhéus, km 22 de S. Luzia a Canavieiras, árvore 8 m, fl. branca, anteras amarelas, restinga alta, 27 Apr 1972, Santos 2290 (US); Mun. Canavieiras a 22 km W, mata perturbada de piaçava, árvore 9 m x 5 cm frutos verdes, 13 Jul 1978, Santos & Silva 3287 (US); Ramal da Fez, Campo Lucio, arborezinha 3 m, fl.

botoes, fr. verdes, 4 Jun 1981, *Hage & Santos* 906 (US); Rodovia Camacan, restinga, arbusto 2 m, fl. brancas, estamos amarelos, 11 Apr 1965, *Belém & Magalhaes* 748 (US); Restinga, arb 2-3 m, fl. brancas, est. amar., fr. verdes, 28 Jun 1966, *Belém & Pinheiro* 2418 (US); Municipio de Marau, rod. BR 030, Ubaita/Marau, restinga e campos naturais, árvore 10 m x 40 cm, 12-13 Jun 1979, *Mori, Carvalho, et al.* 11983 (US); Municip. Belmonte, direc. Itapebí, Río Ubú, ramal km 30, mata solo arenoso, arvorezinha 5 m x 10 cm, fl. esverdeadas, fr. verdes, 18 May 1979, *Silva, Ribeiro & Brito* 403 (NY, US); Mata costera, arbusto 3 m, fl. brancas, cálice verde, fr. verdes, 30 Jan 1967, *Belém & Pinheiro* 3215 (US); Ramal para Mogiquiçaba, Itapeibí-Belmonte, mata higrofila Sul Bahiana, mata raleada por extractores de piaçava, solo arenoso, 100 m alt, 9 Jul 1980, *Silva & Brito* 960 (US); Restinga, arbusto, fl. cremes, estames amarelos, fr. verdes, 6 Jul 1966, *Belém & Pinheiro* 2496 (NY).

Vantanea bahiaensis seems to be restricted to, but widespread in the state of Bahía, Brazil. It can be easily distinguished by the shape and size of the rather thinly coriaceous, glabrous leaf blades, with secondary nerves marked below, and petioles 10-15 mm long. In addition, it is characterized by the subglabrous petals 4-5.8 mm long, with short, very minute hairs, by the 30-40 stamens, by the striate ovary, shortly velutinous-tomentous, and the size of the fruit, perfectly elliptic, rounded at both ends, with thin exocarp and with endocarp of the same shape. The synflorescences are terminal or subterminal, and densely and shortly hirtulous.

***Vantanea morii* J. Cuatrec., sp. nov.** TYPUS: BRAZIL. Bahía: Mun. Andarai, velha estrada entre Andarai e Mucugê via Igatu, a 2 km ao Sur de Igatu, 800 m alt., Campo rupestre, arbusto escandente prostrado em cima de pedras, 23 Dez 1979, S.A. Mori & F.P. Benton 13181 (HOLOTYPE: US; Isotype: NY).

Arbuscula interdum scandens, valde ramosa ramis terminalibus striatis glabris. Folia alterna coriacea rigida brunnescens-viridia breviter petiolata glabraque. Petiolus 2-5 mm longus. Lamina rotundato-elliptica vel elliptica apice rotundata, basi late obtusa subite breviterque cuneata, margine integra, 5-7.5 x 3.2-4.7 cm, costa supra impressa, abaxialiter firma elevata, nervis secundariis utrinque circa 10 utroque latere patentibus, 45-60° divergentibus, filiformibus sed prominentibus prope marginem arcuatis anastomosatisque, nervis brevioribus parallelis alternantibus saepe praesentibus, venis tertiaris venuisque paulo prominulis laxissime reticulatis utrinque quoque bene notatis. Superficie laminorum utrinque lucida densisimeque impresse resinoso-glandulata punctata, interdum insuper abaxialiter minute glanduloso-papillata. Inflorescentiae cymosae thyrsideo-paniculatae, 4-6 cm longae et latae,

ramis alternis laxe patentibus vel subpatulis crassiusculis rigidis striolatis, minute hirtulo-puberulis, terminalibus flores subsessiles glomeratos ferentibus. Pedicelli crassiusculi saepe 1 mm longi. Bractae late semirotundatae 1-0.5 mm longae, 1 mm latae amplectentes minute hirtulae jam deciduae. Calyx paeffloratione quincuncialis. Sepala 5 rotundata basi in annulum coalita, 0.8 mm longa, 1.2 mm lata, glabra sed margine minutissime ciliata, abaxialiter minute immersi-glandulata. Petala 5 oblonga sursum attenuata obtusa, 4 mm longa, proximaliter 1.6 mm lata, crassiuscula glabra alba. Filamenta complanata uniseriata 21-26 breviter (0.5 mm) basi coalita, longiora 2.8-3 mm longa cum breviora 2.2 mm longa alternantia antherae 0.7-0.8 mm longa connectivo crassiusculo acuto, thecis duobus bilocularibus ellipticis albidus 0.4-0.5 mm longis, locis 2, longitudinalibus dehiscentibus. Discus intrastaminalis glaber squamis crassiusculis 22, acutis in cylindrum 0.9-1 mm altum acutidentatum ovarium cingentem adnatis. Ovarium glabrum pyriforme 1.5 mm longum 5-septatum, cellis biovulatis cum ovolis superpositis. Stylus robustus 0.6-0.7 mm longus. Stigma capitatum breviter 5-lobatum lobis glutinosis.

Drupa subglobosa ca 17 x 16 mm in sicco, exocarpio laevi 1 mm crasso. Endocarpium lignosum 15 x 14 mm, subrotundum sublaeve 5 cavitatis monospermis, 5 valvis subaequilongis longitudinalibus, ca 3.5 mm latis instructis. Semina oblonga 6 x 2.5 mm.

Other specimen: BRAZIL. Bahia: Mun. Andarai, velha estrada entre Andarai e Mucugé via Igatu, com entrada km 7 entre os kms 2 e 8 deste desvio, afloramento de rocas, 900 m, arvorezinha 3 m altura, flores em botos verdes, 12 Jan 1983, L.A. Matos Silva, Elton M.C. Leme, et al. 1613 (US).

Vantanea morii is characterized by the leaves rather small, moderately coriaceous, rigid, obtusely elliptic, often almost round, with a very short petiole, by the branchlets glabrous and those of the inflorescences minutely patent-hirtous, and by the small flowers with petals and ovary glabrous. The most distinctive character of this species is the low number of stamens, 21 to 26, all flat and in one row like in other genera of the family. The genus *Vantanea* is known for its numerous stamens, from 50 to 150, or more, with usually filiform filaments; only occasionally in some flowers of a few species of the genus have been counted fewer stamens, down to 30. Although the flowers of *V. morii* resemble those of *Humiriastrum*, the bilocular thecae of the anthers, the biovular cells of the ovary and the structure of the endocarp with the typical long germinal valves, indicate placement of the species in *Vantanea*.

The species is named for Dr. Scott Mori, who collected the type species and called attention to the singular floral structure of his collection.